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COMPARATIVE VALUE OF SULPHURIC ETHER AND CHLOROFORM.

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It is now nearly four years since the first demonstration, by myself, that the inhalation of sulphuric ether possessed the remarkable property of annihilating pain during dental and surgical operations, and that this inhalation was attended with no risk to life. The use of this agent may now be fairly considered as an essential preliminary in all operations, or conditions of the system, in which pain forms an important element. After the first experiment on myself, in the middle of September, 1846, I waited impatiently for some one on whom I could make a more extended trial. Towards evening a man, residing in Boston, whose certificate I have, came in, suffering great pain, and wishing to have a tooth extracted. He was afraid of the operation, and asked if he could be mesmerized. I told him I had something better, and saturating my handkerchief gave it to him to inhale. He became unconscious almost immediately. It was dark, and Dr. Hayden held the lamp, while I extracted a firmly-rooted bicuspid tooth. There was not much alteration in the pulse, and no relaxation of the muscles. He recovered in a minute, and knew nothing of what had been done to him. This was on the 30th of September, 1846. This I consider to be the first demonstration of this new fact in science. As soon as the man whose tooth I had extracted left my office, I consulted Dr. Hayden as to the best mode of bringing out the discovery. We agreed it was best to announce it to the surgeons of the Hospital; but as some time would elapse before an operation, I thought it best to procure some assurance which would induce my patients to take it. I therefore called upon the man who had taken it, and found him perfectly well. *I then called on Dr. Warren, who promised me an early opportunity to try the experiment.*

In the mean time, I made several additional experiments in my office, with various success. From them I select the following, as examples of its varied effects.

I gave it to a lady, but it produced no other effect than drowsiness, and when breathed through the apparatus it produced suffocation. I was obliged to abandon this mode, and obtaining from Mr. Wightman a conical glass tube, I inserted a saturated sponge in the larger end, and

she breathed through that. In this way she seemed to be in an unnatural state, but continued talking, and refused to have the tooth extracted. I made her some trifling offer, to which she assented, and I drew the tooth without any indication of pain on her part, not a muscle moving. Her pulse was at 90, her face much flushed, and after coming to, she remained a long time excessively drowsy. From this experiment, I became satisfied of what is now well proved, that consciousness will sometimes remain, after sensibility to pain is removed.

I afterwards gave it to a Miss L., a lady of about 25. The effect upon her was rather alarming. She sprang up from the chair, leaped into the air, screamed, and was held down with difficulty. When she came to, she was unconscious of what had passed, but was willing to have it administered again, which I did with perfect success, extracting two molar teeth.

Agreeably to his promise, on the 16th of October, Dr. Warren requested my presence at the Hospital to administer the ether to a patient who required an operation on the neck. I applied the apparatus for about three minutes, when the patient sank into a state of insensibility. An incision three inches long was made in the neck, and a difficult dissection among the important vessels and nerves of this region was commenced, without any expression of pain. Soon after, he began to speak incoherently, and appeared to be in an agitated state during the remainder of the operation. On asking him if he had felt any pain, he replied in the negative; adding that he knew the operation was proceeding, and compared the knife to a blunt instrument passed roughly across his neck.

On the next day, October 17th, a tumor was removed from the arm of a female at the Hospital, by Dr. Hayward. In this case I continued the application during the whole of the operation, which lasted seven minutes; there was no sign of pain, though there were occasional groans during the last stage, which she said afterwards arose from a disagreeable dream.

I continued to administer the ether in my office; the following cases which occurred successively there, in about an hour, of which Dr. H. J. Bigelow took the following notes, are good examples of the usual results produced by the inhalation of ether, and of the feelings and expressions of patients under its influence.

"A boy of 16, of medium stature and strength, was seated in the chair. The first few inhalations occasioned a quick cough, which afterwards subsided; at the end of eight minutes the head fell back, and the arms dropped, but owing to some resistance in opening the mouth, the tooth could not be reached before he awoke. He again inhaled for two minutes, and slept three minutes, during which time the tooth, an inferior molar, was extracted. At the moment of extraction the features assumed an expression of pain, and the hand was raised. Upon coming to himself he said he had had a 'first-rate dream—very quiet,' he said, 'and had dreamed of Napoleon—had not the slightest consciousness of pain—the time had seemed long:' and he left the chair, feeling no uneasiness of any kind, and evidently in a high state of admiration.

"A girl of 16 immediately occupied the chair. After coughing a little she inhaled during three minutes, and fell asleep, when a molar tooth was extracted, after which she continued to slumber tranquilly during three minutes more. At the moment when force was applied she flinched and frowned, raising her hand to her mouth, but said she had been dreaming a pleasant dream and knew nothing of the operation.

"A stout boy of 12, at the first inspiration coughed considerably, and required a good deal of encouragement to induce him to go on. At the end of three minutes from the first fair inhalation, the muscles were relaxed and the pupil dilated. During the attempt to force open the mouth he recovered his consciousness, and again inhaled during two minutes, and in the ensuing one minute two teeth were extracted, the patient seeming somewhat conscious, but upon actually awaking he declared 'it was the best fun he ever saw,' avowed his intention of coming there again, and insisted upon having another tooth extracted upon the spot. * * * * *

"The next patient was a healthy-looking, middled-aged woman, who inhaled the vapor for four minutes; in the course of the next two minutes, a back tooth was extracted, and the patient continued smiling in her sleep for three minutes more. Pulse 120, not affected at the moment of the operation, but smaller during sleep. Upon coming to herself, she exclaimed that 'it was beautiful—she dreamed of being at home—it seemed as if she had been gone a month.'"

Early in November, 1846, I applied to Dr. Hayward, for leave to administer it in a case of amputation, which I learned was to take place at the Hospital. The surgeons of this institution, in accordance with the established principles of the profession, which forbids them to use or encourage the use of any preparation of the composition of which they are ignorant, declined its use till informed of its composition. I immediately wrote to Dr. Warren, disclosing the whole matter, and presenting to the Hospital the fullest right to use my discovery for the benefit of the institution. Accordingly I administered the ether on the 7th of November to a female patient at the Hospital, on whom Dr. Hayward performed the operation of amputation of the thigh; it was entirely successful in preventing pain, the woman asserting that she had been wholly ignorant of the operation. On the same day I administered it in a long and painful operation performed by Dr. Warren, of excision of a portion of the lower jaw, in which the patient's sufferings were very much lessened.

On the 12th of November I administered ether to a patient from whom Dr. J. Mason Warren removed a tumor of the arm; the vapor was inhaled for three minutes, when insensibility came on; the inspiration being continued, the patient was entirely tranquil during the whole operation.

On the 21st of November I again administered it to a patient of Dr. J. Mason Warren, from whom he removed a tumor covering nearly half of the front of the right thigh; the operation was completed in two or three minutes, though there was some struggle during it; after its completion the patient remained quietly on his back, with his eyes closed. After he had lain about two minutes, Dr. Warren roused him by the in-

quity, "How do you do to-day?" to which he replied, "Very well, I thank you." He said he believed he had been dreaming; he dreamed that he was at home, and making some examination into his business. "Do you feel any pain?" "No." "How is that tumor of yours?" The patient raised himself in bed, looked at his thigh for a moment, and said, "It is gone, and I am glad of it." It was then inquired if he had felt any pain during the operation, to which he replied in the negative. He soon recovered his natural state, experienced no inconvenience from the inhalation, was remarkably free from pain, and in three days went home into the country.

Having, in a previous publication,* given a sufficiently detailed account of the proper way to administer sulphuric ether, I shall not enter again into these details, but pass at once to the consideration of the comparative value of different anæsthetic agents. I need only allude to the comparatively slow progress of this discovery in America, and the immense mass of testimony from the most eminent men of Europe in favor of its almost universal applicability. To those who would be acquainted with the various attempts instigated by envy, malice, or interest, to establish priority of discovery, and deprive me of the honor of originating the idea, and the consequent experiments, I may refer to the report of the Mass. General Hospital, re-published with notes by R. H. Dana, Jr., to the Report of the Committee to Congress, and to the award of the Monthyon Prize by the Paris Academy of Sciences.

After the claims of ether had become fairly established, another anæsthetic agent, *chloroform*, was introduced by Prof. Simpson, of Edinburgh, as a means of destroying the pains of parturition. This new agent soon created a strong impression in its favor, and has been by many substituted for ether. Its alleged advantages are its more rapid and intense action, its smaller dose, and its more agreeable taste and smell. Extensive trial, both in this country and in Europe, has, I think, proved its great dangers; several deaths have been caused by it, while there is no well-ascertained fatal result traceable to ether. For this reason, many surgeons, and among others Dr. George Hayward, of this city, have denounced chloroform as dangerous, given up its use, and returned to sulphuric ether with increased confidence.

The question, then, is that of the comparative *safety* of sulphuric ether and chloroform. This question can only be settled by experience, and by comparing their effects on the system; such experience has been accumulated to a great extent, and it is the object of these pages to show that the conclusions drawn from it prove the great superiority of sulphuric ether to other anæsthetic agents. My own experience in the application of the former, which has been considerable, and probably unsurpassed by any in extent and freedom from accidents, will supply abundant materials for its full consideration. For the effects of chloroform, I shall depend on the published accounts of the best authorities.

To make a just comparison, it will be necessary to say a few words on the physiological and pathological effects of ether and chloroform.

* On the proper mode of administering Sulphuric Ether by Inhalation. Boston, 1847.

Though the general effects of ethereal inhalation are similar in nearly all cases, yet certain idiosyncrasies, or certain conditions of the system, modify the phenomena, as they do of all other medicinal agents. Instead of quiet and sleep, you often see excitement, agitations, or even slight delirium. In some cases small doses will etherize, in others it requires a large dose to produce unconsciousness. Sometimes, while pain is annihilated, the intellect and the senses are unaffected; the circulation, respiration, muscular action, secretions, and consequent phenomena, are variously modified. Besides idiosyncrasy, no doubt many of these anomalous or discordant phenomena are owing to improper quality or quantity of the ether, or some defect in the manner of administration. It is of the first consequence that the ether should be *pure* and highly concentrated. As a general rule, about two ounces (see table on page 116) should be used to begin with, this being sufficient for full etherization in most cases; and it is better to induce this rapidly by a large dose, than gradually by a succession of small ones. To secure a due proportion of atmospheric air to the lungs, a simple bell-shaped sponge is preferable to complex inhalers. Early experiments were attended with disagreeable results, from the supposition that it was necessary to inhale ethereal vapor alone, instead of atmospheric air charged with this vapor. The effects of ether are usually produced in from three to five minutes. On removing the sponge, and allowing the introduction of pure air, recovery takes place in about the same time. That there is no danger in prolonging the state of etherization for a considerable period, the records of midwifery fully prove. After recovery from this state, the brain and nervous system are rarely inconvenienced by the excitement, if the ether have been pure; even headache is uncommon, and nausea or vomiting, delirium, or convulsions, are quite rare, unless it is inhaled soon after eating.

The symptoms indicate two distinct stages of etherization, or rather the complete and the incomplete. As the latter is all that is required for the dentist's operations, in which no important nerves or vessels are wounded, it is important to be able to recognize it. After the cessation of the slight cough which leads the patient to reject the sponge, the respiration becomes more rapid and audible; the pulse is natural, or slightly accelerated; the pupils are unaffected; the muscular apparatus is somewhat excited, and the movements more or less disordered; the inspirations become deeper, till at last insensibility comes on. In this stage we meet with the most curious affections of the intellectual and sensitive functions, in which sensation is destroyed while the intellect is untouched, the pain perceived but not recollected, or the will active and the power of motion lost. These are now known to be cases of incomplete etherization. The completed stage is characterized by a perfect relaxation of the muscular system; the pulse becomes slow; the pupil often dilated; the respiration often snoring. The sign to suspend the application is the diminished force and frequency of the pulse, and even before this, the muscular relaxation.

Ether undoubtedly acts in the first place as a stimulant, and finally as a narcotic. Magendie and Orfila have offered strong reasons for be-

lieving that the anæsthetic state is analogous to intoxication from alcohol. Both produce the same excitement and subsequent insensibility; both act principally on the nervous system through the medium of the circulation; both may be detected in the blood by undoubted tests. It may, then, be called an intoxication, quickly produced, and as quickly disappearing.

Much has been written by physiologists on the order in which the various parts of the nervous system are affected; and there seems to be some discrepancy of opinion at the present time. M. Flourens (in a memoir before the French Academy in Feb., 1847) maintained that the action of ether on the nervous centres is in the following order: the *cerebral lobes* first are affected—in other words, the seat of the intellect; then the *cerebellum*, when *equilibrium* of motion is lost; then the *spinal marrow*, with loss of sensation and afterwards of motion; finally (if the experiment be carried to this extent), the *medulla oblongata*, cessation of respiration, and death.

My own experience leads me to adopt very nearly the conclusions of Dr. Brown, that the various parts of the nervous system are affected, in cases of complete and normal etherization, in the following order:—The cerebellum first, then the cephalic ganglia, the true spinal marrow, the ganglia of special sense and the cerebro-spinal system, and lastly the cerebrum proper; though it is not probable that the cerebrum is ever fully etherized, from the occurrence of dreams; total insensibility of the cerebrum would be nearly equivalent to death, or complete etherization of the medulla oblongata.

It has been a question whether ether produces its effects through the nervous or vascular systems. The first (*stimulant*) effect of ether is without question due to the conveyance of its action by the par vagum to the medulla oblongata, causing increased respiratory movements and quickened pulse; but, as far as experiments yet prove, the *narcotic* effects of ether are produced through the bloodvessels. This is easily understood when we consider the great extent of the internal pulmonary surface, its vascular net work, and the ease with which air is taken up; once introduced into the pulmonary blood, it would be very soon sent by the heart to the cerebral organs, and produce speedy narcotism. Unlike alcohol, ether taken into the stomach does not produce its specific effects. This has been proved by the experiments of Flourens; and this we should expect from the less extent and absorbing power of the gastric surface. Whether the ingestion of *ether vapor* into the stomach would be equally ineffectual, has not been proved; we know that the injection of the vapor into the *rectum* is speedily followed by insensibility.—See *Comptes Rendus*, Avril, 1847, p. 605.

When we consider the immense number of cases in which ether has been administered, and the exceedingly few and trifling accidents consequent on its use, we may fairly say that its inhalation is unattended with danger. I have administered it in thousands of cases without a single alarming result, to persons of every age, temperament, and condition of bodily health. The experience of Dr. George Hayward, of this city, is to the same effect. He says (Boston Medical and Surgical Journal, April

10, 1850), "I have administered it to persons of all ages, of every variety of constitution, and in almost every state of the system, and I have never known in a single instance a fatal or alarming result. I have given it to infants of seven weeks old, and to individuals of 75 years, with entire success. There is reason to doubt whether death has in a single instance been produced by it, when it has been properly administered."

Its advantages as an anæsthetic agent are its perfect safety, the ease with which it is administered, and the absence of ill consequences. Nausea, vomiting, and irritation of the air-passages, rarely occur unless the ether be impure, or be improperly administered; excessive narcotism may be remedied by cold water externally, and stimulants internally, which will soon excite the respiration to free the lungs from the ethereal vapor. The pungent and disagreeable odor of ether is a trifling objection compared with its advantages over chloroform in point of safety. I may again quote Dr. Hayward in this connection, who says, "I should give it the preference over every other article with which I am acquainted, that is used for the purpose of producing insensibility."

I leave it to surgeons and physicians to speak the praises of ether in the various surgical, medical and obstetrical operations in which it is now universally used, whenever the relief of pain is an object of importance; I shall only allude further to a few results of my own experience in dentistry, which may not be uninteresting to the profession. I will here introduce a table showing these results for a short period of my practice, which will enable me to show the nature of the operations, the quantity of ether required, the time for producing and the duration of unconsciousness, with the general effects on patients of different ages and temperaments. [See next page.]

From these cases, forty-four in number, we see that both sexes are affected in the same manner; that ether may be given at all ages; that for ordinary operations the quantity required varies from one half to two ounces; that insensibility is produced in from one to four minutes; that recovery takes place in less time, proportioned to the severity of the operation; that it is well borne by every variety of temperament; that the pulse, when affected at all, is generally slightly quickened, rarely slower than natural; and that for the most part those under its influence remain perfectly quiet, and undisturbed by nausea or vomiting.

Chloroform, or the perchloride of formyle, which was at first extensively employed as a substitute for ether, till numerous fatal accidents led to its more limited use, was first brought into notice as an anæsthetic agent by Dr. Simpson, of Edinburgh, who is entitled to the greatest praise for his scientific endeavors to improve our knowledge of anæsthetic agents. He says it possesses over sulphuric ether the following advantages—it is more powerful, 120 drops being sufficient to produce insensibility; he has seen it produced "by six or seven inspirations of thirty drops of the liquid"; its action is more rapid and complete, and generally more persistent; it is more agreeable to the taste and smell. He might have added, if experiments then had allowed, that it is also *very much more dangerous*, and its very danger consists in its so-called advantages. We have rea-

son to believe that the chloroform used by Dr. Simpson is a purer and superior article to that commonly used here; this may account for the favor with which he views it. To counterbalance its agreeable taste and odor, chloroform is of an acrid caustic nature, and is apt to excoriate the skin. According to Dr. Hayward, its administration is generally followed by headache and vomiting, which continue for hours, with restlessness and want of sleep. Several cases came to his notice where it was taken in small quantity for dental operations, in which the brain and nervous system were affected to an alarming extent. Convulsions have frequently attended its use, as detailed by Dr. J. C. Warren (On Chloroform, Boston, 1848).

Sex.	Age.	No. of Teeth extracted.	Quantity of Ether used.	Insensibility produced in	Recovery in	Temperament.	Pulse at com- mencement and end.	Remarks.
F.	33	16	2 oz.	5 m.	1½ m.	Lymphatic.	70-105	Perfectly quiet.
F.	34	21	1½	3	1	Nervous.	77	" "
M.	19	1	1	3	1	Lymphatic.	100	Restless.
M.	40	7	1	2	2	Very nervous.	100	No resistance.
M.	21	1	1	1	1	Lymphatic.	120	" "
M.	48	1	1½	1½	1	Robust.	70	Slight resistance.
M.	28	1	1	1	1	Delicate.	70-60	Quiet.
F.	...	2	1½	3	3	Common health.	65-70	" "
F.	23	Nrv. destr.	1	1½	1½	....	100-130	Considerable agitat.
M.	...	1	1	1	1	....	....	....
M.	24	2	1½	1½	instanly	Common health.	Irregular.	....
F.	20	Tooth exc.	1	3	2	"	"	Perfectly quiet.
M.	29	4	1	2	2	Sanguine.	82-110	Quiet.
F.	18	1	1	3	1	....	"	Laughter.
M.	10	4	1	2½	1½	Lymphatic.	80-90	Quiet.
M.	25	4	1	3	3	"	"	"
M.	18	2	1	1½	1	"	Quickened.	"
F.	21	2	1	1½	1½	Common health.	100-120	Trembling.
F.	33	1	1	1½	1½	"	80	Conscious but insens.
F.	18	1	1	1½	1½	"	130-120	Quiet.
M.	21	3	1½	3	2	"	100	"
F.	25	3	1	3	1	....	80	"
F.	18	2	1	1½	1½	....	100-110	"
M.	21	4 Nvs. dest.	2	3	6	Very nervous.	160-100	"
M.	30	1	1	3	1	Sanguine.	80	"
F.	20	1	1	2½	1	Weakly.	58-120	Perfectly quiet.
F.	34	1	1	1½	3	Nervous.	130-80	" "
F.	32	6	1½	5	5	Lymphatic.	80-90	" "
F.	40	10	1	2	4	Weak & nerv.	70-80	Occasional spasms.
F.	22	16	1	3½	4	Lymphatic.	Quickened.	Quiet.
M.	3	1	1	3	3	Nervous.	130	Resisted.
F.	20	3 roots.	12	5	1½	Lymphatic.	Quickened.	Pleasant dreams.
M.	38	exc., 3 nv. d.	5	6	5	Sanguine.	70-130	Agitation.
F.	43	6 roots.	1	1½	2	Lymphatic.	....	Nausea.
F.	21	Nrv. extr.	3	3	3	Very nervous.	83-120	Dreams.
F.	25	3	3	4	2	"	Quickened.	Conscious but insens.
F.	18	3	1	3	3	Nervous.	....	Slight resistance.
M.	19	...	3	4	2	Very nervous.	....	Trembling.
M.	30	1 milk tooth	1	1½	1	Nerv. Sanguine.	Regular.	....
M.	25	8 roots.	3	6	3	Lymphatic.	Quickened.	Delightful dreams.
F.	20	1	1	3½	3	Nervous.	70-60	Bad taste.
F.	16	1	1½	3	1	"	Regular.	Screamed but insens.
F.	25	1 filled.	3	3	10	Lymphatic.	"	Perfectly quiet.
M.	10	5	2	2	1	Sanguine.	Quickened.	Conscious but insens.

The physiological effects of chloroform are of the same nature as those of ether, only greater in degree, more rapidly produced, less to be

calculated on, and therefore more dangerous. That the partizans of chloroform were too hasty in maintaining that it always produces a calm sleep, without agitation or excitement (which was one of its alleged advantages), we may quote the distinguished surgeon Roux, who (*Comptes Rendus*, Dec., 1847) gives details of operations under its influence, performed by himself, in which the involuntary movements (in a state of complete insensibility) were so violent that they were with difficulty managed; in another case the patient's recovery was attended with the same excitement, disordered intelligence and loquacity, which have been set down as peculiar to ethereal inhalation.

Velpeau, though allowing the rapidity and certainty of its action, says that the duration of the insensibility is such as to render it dangerous in unskilful hands. A woman, who had inhaled it for only two minutes, remained for eighteen minutes without giving the least sign of sensibility. Its strength is such that an animal dies under its influence in two minutes, that would require the influence of *ether* for twelve minutes. As a general rule, a *drachm of chloroform* is considered equivalent to an *ounce of ether*. The very fact of its quick and certain action renders it formidable if prolonged carelessly; it is impossible to know exactly when to stop, and the fatal blow may be given before we are aware of the danger.

M. Dumas, the eminent chemist, considering the extreme power of this substance (see authority last quoted, p. 891) and its liability to abuse, remarked that chloroform ought to be classed among the *poisons*, whose sale is forbidden *by law* unless on the prescription of a physician; and recommended the police to attend to the subject.

These, and many other authorities which might be quoted, sufficiently attest the great danger of chloroform; and unfortunately there are many cases of *death* which can only be attributed to this powerful agent, though administered with care to healthy persons, in very small quantities, and by cautious practitioners. Even the death of a *single* individual should open the eyes of its advocates to the dangers of its use; but when upwards of *twenty* fatal cases can be clearly traced to the action of chloroform, it seems unjustifiable practice to submit a patient to its dangers, especially when we have in sulphuric ether an agent equally *effectual* and perfectly *safe*.

Malgaigne, in his Report to the French Academy, says that chloroform possesses a poisonous action peculiar to itself, which action, by being too much prolonged, may cause instant death; we can never be certain of being able to control it within the bounds which produce mere *insensibility*, when the passage from this to *death* is so sudden and so near.

Dr. Hayward, alluding to the undoubted fatal cases from the use of chloroform, says, "I know not how a conscientious man, knowing this fact, can willingly take the responsibility and expose his patient to this fearful result."

To show the danger of chloroform, its power, suddenness of action, symptoms and morbid appearances, the table in Dr. Warren's work (above quoted) containing ten fatal cases, may be consulted with ad-

vantage. Of these ten cases, three were for operations connected with dentistry, viz., extraction of stumps, toothache, &c.; two had never used any anæsthetic agent before; while the third had used chloroform frequently without bad effects, yet she died instantly at last while under its influence—showing that previous use with impunity is no security against a final fatal result. The time of inhalation in most of the cases was about *one* minute, from a sponge, handkerchief or apparatus; the quantity varied from twenty drops to half an ounce; death ensued in two cases instantly, in the others in from one to ten minutes—showing the fatal issue cannot depend on the quantity inhaled, nor on the manner or duration of the inhalation, but on an instantaneous poisoning of the nervous centres. The symptoms in most of the cases were paleness of the face, discoloration of the lips, disordered respiration, extremely feeble pulse, with relaxation of the limbs, preceded in some by rigidity or slight convulsions; in two cases, in which the heart and liver were enlarged, the face is described as of a livid hue. The morbid appearances varied according to the quantity used and the duration of its influence in most of the cases, though in some the poisonous action was so quick that the appearances could not be attributed to the influence on the blood: thus, congestion of the brain, heart and lungs, was found in some who had inhaled but a small quantity for a short period; while in others, under the opposite conditions, these organs were natural. A remarkable fluidity of the blood was a constant phenomenon. It is very evident that the cause of death is not asphyxia, but sudden poisoning of the nervous system, or an instantaneous paralysis of the heart's action.

In the same Journal (for Sept. 30, 1849) may be found an interesting account by M. Robert, of the Hospital Beaujon, Paris, of four cases in which the administration of chloroform was followed by extreme agitation, in two of the cases ending fatally, as he believes, from pulmonary emphysema produced by this excitement.

Chloroform, injected into the arteries, causes in the muscles supplied by such vessels an increased amount of contractility, which may justly be called a partial and uninterrupted *tetanus*; and this it does by a special action on the muscular fibre, and not by any direct action on the blood or on the nerves. Experiments, going to prove this, may be found in the *Comptes Rendus*, for April, 1849.

As to the relative safety of sulphuric ether and chloroform, we may justly conclude, from the numerous data now existing in the annals of medicine and surgery:—

1. That there is an immense preponderance of testimony in favor of sulphuric ether, both during and after its application.

2. While there is but one case, and that not well ascertained, in which ether has been accused of producing fatal results, there are not less than twenty, and probably many more, in which the fatal result is clearly traceable to chloroform.

3. Chloroform has caused death in the young and the old, the strong and the weak, the healthy and the diseased; and cannot be said to be safe in any condition of the system.

4. Chloroform is much stronger and more prompt in its action than ether, and less volatile; which renders it impossible to calculate its effects, and difficult to avert danger in season to save life. The anæsthetic effects of ether gradually subside when its use is stopped; but the less volatility of chloroform often causes an aggravation of the symptoms, after the inhalation has ceased.

5. Chloroform may kill directly by its action on the nervous system and the blood, or indirectly by asphyxia.

6. There are certain idiosyncrasies, which cannot be known in advance, in which a very minute quantity of chloroform has produced, and will again produce, death.

7. In females and children, in whom there is generally a greater susceptibility of the nervous system, the action of chloroform is quicker, more complete, and therefore more dangerous.

8. Chloroform has produced instant death from syncope, or cessation of the action of the heart; it is therefore extremely dangerous in cases where the heart's action is enfeebled by lingering disease, by fear, by valvular or aneurismal disease, by old age, by sudden or large losses of blood, or any other cause of weakness.

9. There is no reason for diminution of confidence in the *efficacy* and perfect *safety* of sulphuric ether; while there is an unanswerable reason why chloroform should be abandoned, as its use involves the risk of a *fatal result*, which can neither be foreseen nor prevented, from the immediate suspension of the powers of life during its administration, or consequent changes in the nervous and vascular systems.

10. That while sulphuric ether will produce *safely* all necessary results expected of anæsthetic agents, no one is justified in submitting his patient to the risk of his life by using chloroform, simply because it is more agreeable, more powerful, cheaper, or more portable.

The above conclusions will apply to chloric ether as well as to chloroform, with a due modification for the inferior strength of the former, and for the fact that as yet no fatal effects have followed its use, as far as I know. Many surgeons speak highly of it as an anæsthetic agent, and are satisfied of its safety. But as *chloric ether* is a tincture of *chloroform*, or a mixture in variable proportions of the latter with alcohol, it must obtain its anæsthetic effects from chloroform. Alcohol cannot diminish the danger in idiosyncrasy or in conditions where chloroform has proved fatal. Though its odor is more agreeable, the quantity required to produce insensibility is as great as that of sulphuric ether, and the same time is required in both; it also irritates the skin, is more apt to produce nausea and vomiting, and greater disturbance of the nervous system. Says Dr. Hayward, "I cannot divest myself of the belief that chloric ether is an unsafe anæsthetic agent. * * * I fear that if it be used with the same freedom that sulphuric ether is, we shall soon have to record some very different results. * * * We cannot be by any means certain that death, when not looked for, may not follow its exhibition."

19 Tremont Row, Boston, Sept. 3, 1850.

LETTERS FROM GERMANY.

FROM THE EDITORIAL CORRESPONDENCE OF THIS JOURNAL.

COLOGNE.—Who has not had a bottle of the pure eau de Cologne ? Well, this is the spot where about two drops in every two hundred barrels sold annually, are manufactured ! No less than half a dozen shops, in sight of each other, have special notices in front, in French, German and English, assuring the gullible passer-by, that their's is the only genuine depot, where the unadulterated Farina article is to be had. All travelling ladies, of course, lay in a stock, in passing through, which is no small item of income to the venders, since a bottle, the diameter of an alderman's thumb, costs quite as much as it would in London or Boston.

Coblentz, at the junction of the Moselle with the Rhine, is exceedingly curious in various respects. Opposite is the formidable, elevated fortress of Phrenbreitstein, the strongest position in Germany, on the peak of a high rock, from the top of which there is an uninterrupted view of many distant towns, towers, turrets, of the meandering river, bearing a fleet of strangely-devised vessels, laden with the various products of this and other lands. A bridge of boats (admirably represented in the Panorama of the Rhine exhibited in Boston last winter) shows that many of our rivers might be crossed in the same way, without detriment to navigation. Instead of the solid frame-work at Wheeling, over the Ohio, productive of bitter animosity between the up and down-river people, the boat bridge would have answered all the demands of land carriage, and would have been cheapest. Those having the management appear to reside in the boats, several having windows on the sides. From thence, steamers stem the current of the winding, swift-flowing Rhine, to Mayence, laden with the representatives of the whole civilized world. With descriptions of the scenery, the majestic ruins crowning the everlasting hills on either bank ; the terraces for cultivating vines, on the steep sides of the rocks, which produce the highly-prized Rhenish wines ; with innumerable incidental sights, many of them worthy of description, books and diaries abound, consequently it is unnecessary to dwell upon them longer. Those who have ascended the upper Mississippi, would look upon the mere river Rhine, unconnected with its historical associations, in the light of a small affair. On reaching Dierich, a few miles below Mayence, the distant landscape brings to mind the general appearance of the rich prairie bottoms on the Iowa side of the former river. Johannesburg, the estate of the fallen statesman Metternich, bears a resemblance, in the gentle, graceful swellings of the surface, the deep-green fields, and inviting aspect, to many untouched beauty-spots on the virgin soil near Lake Pepin.

Weisbaden, considered the first watering place in Germany, surrounded by the hills of Taunus, having a fixed population of about 12,000, admitted to be bewitchingly attractive, abounds in wealthy and very seductive influences in the form of gardens, walks, saloons, and, in short, whatever modern civilization has devised for extracting money from a close pocket. At the moment of penning this line (July 24th) it is conjectured that some thousands of strangers are in town, vastly more

than peep in upon Saratoga thus early in the season. By the middle of August the number may rise to 10,000. The hot spring, at which the multitude centres in the morning, boils out of the ground, bubbling like a pot, at an uniform temperature of 149° F.—therefore too hot for drinking till cooled. The quantity thrown up through all the crevices, in twenty-four hours, is not less than 11,000 hogsheads. It has the flavor of weak chicken-broth, through the aid of a favored imagination. There are sixteen of these thermal springs, but only one of them is particularly curbed, attended by a splendid band of music at an early hour, and otherwise receives the homage of noblemen and beggars. Carbonate of lime, magnesia, muriate of lime, alumina and iron, are held in solution, and although magnified into being a remedy for many diseases, Weisbaden, without its gaming tables, would lose its attractions. Gold and silver change ownership in startling rapidity, from 11, A. M., to 11, P. M., on a scale far exceeding the banking operations of chartered institutions in State street. Such gambling is not often witnessed.

At Weisbaden, there is evidently a subterranean fire, for how could water be heated without its agency? No less interesting are the warm and hot springs of Virginia, where the same phenomena occur, as mark this ancient bathing place of the Romans. One, however, is on the ridge of the Alleghanies, and the other on a plain—but both, unquestionably, are chimneys of volcanoes, into which water percolates, through fractures and dislocations of the rocks, till it reaches the furnace, where it is instantly converted into steam, which being condensed before arriving at its outlet, is urged on and upward, by the expansive force that is acting upon the column below.—At Weisbaden, Dr. Webster's confession was first made known to us, through the English press, giving all who read it a thrill of horror.

Baden-Baden, Grand Duchy of Baden, Germany.—When the Journal was last addressed, the paper was mailed at Frankfort-on-the-Main, where the peace congress is to meet towards the close of August. Besides a beautifully-executed bronze statue of Goethe, and the identical house still standing in which the poet was born, there is a fair share of astonishments, just far enough apart to keep a visiter actively moving while he remains. In the Jews' street, so narrow that a carriage is driven through it with difficulty, having immensely high, dilapidated old houses on either side, is pointed out the one in which the great bankers, Rothschilds, drew their first breath, and where their mother continued to reside till the day of her death, two years since, at an advanced age, notwithstanding the wealth of her children, who could at any moment pay down the ready cash for a kingdom. A purely medical traveller, who takes no interest in anything that does not have the flavor of ipecac., would find nothing for his diary in Frankfort, beyond the names of a few lucky practitioners, who have the patronage of those best able to pay their bills. Circumstances, in the profession of medicine, make the man—even in Europe. A very few rise to distinction by their energy of character, but the first positions are in the safe keeping of family influence. When a biographer speaks of this and that one as being called to a professorship, it would be far more honest to declare that through the

controlling activity of friends or relatives, he was raised over the heads of competitors, whose only qualification was merit—a kind of coin that is quite as much below par in Germany as in some other countries. In France—Paris particularly—there is a splendid exception to the monopolizing spirit. Velpeau, Lisfranc, and a brilliant catalogue of medical and surgical luminaries, would never have been known, were the policy adopted there that is acted upon by the leading managers in the schools of medicine generally.

Every day in travelling brings with it something new or strange, differing so much from the manner of doing things in young America, that it is not safe to mention more than one in a dozen of them. An idea may be formed of the general deviation from our satisfactory standard—which is considered by us a normal condition, such is our vanity—by merely relating that all through the Duchy of Baden, cows are worked like oxen; but the funniest part of the story is, that they draw by their horns instead of shoulders. A rope is tied to each horn, made fast to the cart, or a small pad is placed on the forehead and a rope passes across it. Notwithstanding their hard service, they are milked as usual. On remonstrating with a person on the impropriety of this, and stating that the nutritious properties of the milk were injured by heating and teasing the poor animals while at service, and it was therefore less suitable for food, and adding that in other countries they were, by general consent, exempt from labor, he shrugged up his shoulders, laughed at the idea, and was apparently ready for a long argument, to prove, on German principles, the futility of our theory as well as practice. Through Holland, carts and waggons are minus a tongue—a short stump projects from the middle of the forward axletree, that turns like half of a letter S, which the driver pushes either way to turn the course of the vehicle. In building coaches, they are copying the fashions of their neighbors by having tongues and thills. Goats are kept harnessed, on public stands, in miniature carriages, for hire, in airing children; and donkeys, poor despised asses, fantastically caparisoned, according to the owner's notions of elegance, are in such numbers, where there is any climbing to be done, that they are called the Weisbaden cavalry. It is pleasant to contemplate the character of these creatures, after all that is said of their stupidity. Those long ears were not made in vain; nor could the link in nature's chain of animal gradations be complete, without that big head, dull eye, small hoof and sure-footedness. They hear more than they say—what they think, is best known to themselves; but if one of them should happen to speak, as Balaam's did, what singular experiences they might relate of the ecstasies of foreign travellers, on first coming in view of the magnificent scenery to which they safely carried them on their low saddled backs. The only idlers in these old countries are the rich—it being a maxim, apparently, that nothing is worth having that is not productive. Let any man practise constantly upon this suggestion, and refuse even to keep a cat that never had kittens, and he is on the way to wealth.

No one, possessing a ray of observation, can pass through central Europe, without noticing something worth copying in agriculture. In the Duchy of Nassau, all the roads are bordered by fruit trees—apples,

pears, cherries and walnuts, which answer the two-fold purpose of shade and ornament, and then furnish the way-farer with wholesome fruit.

WATER, BATHING AND WASHING.

To the Editor of the Boston Medical and Surgical Journal.

SIR,—You have quite stirred the people up, “frighted the Isle from her propriety,” by an article in your last number, in which is questioned whether men are aquatic or land animals—ducks or hens—bipeds with or without feathers. I was delighted with your article—with it all, except the *flannel proviso*. To me this was as unpalatable as is the Wilmot one to the South. To wear flannel, *me judice*, is to rub the skin when foul with a towel, and to wear it afterwards. And more, to me, flannel was most unhealthful. I was eternally sneezing and blowing, until my nose began to acquire the dimensions of that wonderful one which led to such profound questionings in the voracious journal of Sterne. No, Mr. Editor, I fight against flannel. I have not worn it for forty-five years and four days, and it is odds if I ever don it again.

But, to the water question. I have no sympathy with water. I am a perfect hydrophobist. Nothing to my mind is more ludicrous, ridiculous, &c. &c., than for a man regularly to strip, to jump into a tub of water, and then “jump out again”! There is no cleansing in such a process. You may *wet* the skin, make it look blue, give it the real par-boiled *smoothness*—but as to cleansing one’s skin so, you do no such thing. You imperfectly *wet* it, and that is all. Recollect for a moment the nature of one of the cutaneous secretions, essentially oily, and then with a glass or good eye see how it fares with the water which you pour upon or over it. This stands in small *separate drops*, for all the world resembling globules of mercury, and absolutely never *touch* the skin. Not only is air between them and the skin, but as dense a coating of natural grease as one can find on a summer’s day.

Think for a moment, dear Mr. Editor, of attempting to clean the back of the neck—the *ears*, inside and out—the axillæ in summer—and the regions round about Jordan, with cold water! It is utterly preposterous—impossible; water “can’t come it”! I used to try, but having wasted water, strength, and time enough, I gave up in despair, till one day standing naked before my glass, and thinking what I should do next, soap came to my thought. It was got—the best in the market—Babbitt’s, when it was invented—and to work I went, and I came out of the battle clean—yes, clean indeed! This is your only way. It takes time; but get up early and find it. It saves time, too, for you need not be eternally paddling in water, as is the wont of many. You are clean, and the cleanliness sticks. You need not wash it off once or twice every day. I have friends who almost literally live in the water. I am looking for the feathers. Thrice a day is common with them. Only think of such a discipline. It beats the old system of Flagellation out and out. I do not see how they can do any thing else but *bathe, bathe, bathe*! How do they eat and drink? It is suggested that they feed by *absorption*.

You give the history of a friend whose system of water discipline is striking; but I have a case which goes far ahead of it. An old gentleman told me his course. "I rise," said he, "all the year round, at day break. I strip myself and go into a north room, with painted floor, and wooden, painted chairs. There is my bathing tub. I break the ice, in winter of course [he is very precise], and jump in. I stay in till I am satisfied, get out, rub well down, and when dry, make my lather, sit down naked on my painted chair, naked feet on the floor, and shave. This takes some time, as I shave the whole face, not allowing a large part of it to run to grass, as is the custom of the heathen. Then I proceed to dress. My skin is as red as a lobster, and as warm as a toast." Such was the history. My friend is towards eighty, and very spare of flesh. When he described so graphically his morning devotions to the god of health, I was reminded of that passage in Don Quixote, in which the good knight does penance on the mountains, *in puris naturalibus*, so much to the confusion of the delicate and sensitive Squire. I saw, mentally, my friend, in his age, leanness, and nakedness, on that painted chair, and instantly

"Walked backward with averted gaze,
To hide the shame."

I said I was a hydrophobist. I came by the disease naturally. An aged relative of mine, from the best accounts I can gather, never tried a bath but once; at least, this is the only instance I ever heard of. He was between sixty and seventy. His servant who had care of the horses was directed to rub the old gentleman well. He was suffering from a skin disease of his legs. Dick was, so to speak, to *curry* him; which he did—and no mistake. My aged relative did all he could to shorten the time of so terrible a process; but he had to submit. He could not get out of the tub, and when taken out, he left much of his skin behind. He declared, with an emphasis which the age tolerated, that he would never be bathed again, come what might—and he never was. He died between ninety and a hundred, of acute disease, being in excellent health a few days before—the hero of a single bath. He left a large number of descendants, having had, as he once said, with a playful twinkle in the tail of his eye, eighteen legitimate children.

Dear Editor, I have written with much speed, this early morning, and feel most nicely and cheerly after *my* bath. I am as nice as a pin, as clean as a baby, and shall directly be in my chaise, in the way of such professional and other duty as may fall into my way.

Ever yours,

"O"

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, SEPTEMBER 11, 1850.

New Remedy for Tape-worm.—The *Koussou*, otherwise called "Bray-era Anthelmintica," from Dr. Brayer, who first made its properties known, is a tree which is found in Abyssinia, said to grow to the size of an oak,

and to bear bunches of small flowers, varying from a pale green to a rose color. The flowers, which appear to be the medicinal part of the plant, have been used by the Abyssinians for a long period for the purpose of destroying the tape-worm, to which they are very much subject. It is said that this new medicine is exported in a powdered state, having a resemblance to jalap in color, and scammony in its aroma. It is slightly bitter, and a little nauseous in its taste. Dr. Budd, in a clinical lecture at King's College Hospital, London, which is reported in the *Lancet* for June, makes mention of the new remedy. He fully concurs with the European and native doctors of Abyssinia, in their opinion of its merits as an anthelmintic. There is one great obstacle, however, in the way of its general use by the profession, and that is the enormous price at which it is held. M. Baggio, Pharmacien, No, 13 Rue Neuve des Petit Champs, Paris, is the only one who has it for sale, and he charges for a single dose forty francs, about \$4 75. A dose, 3ivss., is put up in a little phial, that is well stopped. It is hoped that some of our enterprising druggists will make an effort to obtain some of this new remedy, that we may have an opportunity also to test its reputed valuable properties.

Dr. John Bell and the University of Pennsylvania.—"A memorial to the Trustees of the University of Pennsylvania," by Dr. Bell, has been received. We understand from it that the choice of professors to fill the vacancies that have lately occurred in that institution, has given dissatisfaction to the memorialist; or, rather, the mode in which the appointments were made. The power to appoint professors and fill vacancies is vested in the trustees; but Dr. Bell thinks *nominally* so, and it is upon that particular point that he complains. He considers the faculty themselves the ones who really make the appointments, or at least the selections, which is analogous. "The present government of the medical department of the University of Pennsylvania is an anomalous one. Ostensibly it, like that of the other departments, is vested in the Board of Trustees. In reality, it is exercised by the Medical Faculty. The former goes through the form of appointing; but the latter designates him who is to be the successful candidate. Were this designation made in a fair, open, regular, and authentic manner, so that the responsibility of the measure should rest on those from whom it originated, there would be no room for reprehension, scarcely even for complaint. The reasons for the preference having been openly stated could be openly discussed, and their real weight estimated; separating those which bore directly on the required qualifications of the candidate, from motives of personal regard for him, or of personal or professional pique or jealousy towards a less favored competitor." If election by concours should become the law of our medical institutions, there would be little room for jealousies, or ill feeling towards a successful candidate. We really hope that those concerned may see the propriety of adopting such a measure, and it is our earnest wish that the trustees of our Colleges will take the matter under their especial consideration. The very case of Dr. Bell's memorial to the trustees of the University, speaks volumes in favor of having the old system of appointments abolished. We do not pretend to know that all which is contained in Dr. Bell's memorial is entirely correct, but it certainly appears very reasonable, and deserves a very careful consideration. The high standing of the memorialist will secure it from entire neglect.

Coad's Patent Graduating Galvanic Battery.—By reference to an advertisement in another part of the Journal, it will be seen that Mr. P. Coad, from Philadelphia, is in our city, ready to exhibit his inventions and improvements in the Galvanic Battery. The batteries which have generally been in use, in this and other cities, have had a similar name applied to them (*Graduated*), though their action has been as different from this, as the common electrical cylinder from the battery which generates the galvanic fluid. Although it is said that they are graduated, yet such is not the fact. It is true, by the sliding of the bundle of rods within the helix, the amount of intensity from the battery can in part be regulated. It would thus appear to be the magnet which should receive the term "graduated," and not the battery. In the apparatus of Mr. Coad, and for which he has had letters patent since 1842, the graduation of *quantity* is regulated in the battery itself—a very decided difference, and important in several particulars; one of which is, that the expenditure of force is only requisite to the amount actually needed in an operation. In the second place, the operator has the galvanic fluid under his perfect control. An individual may take the poles in his hands, and the fluid may be made to pass through him, in a most delicate manner, or its force by *quantity* can be so increased, as to deprive him of life. This apparatus also differs from others by the absence of an armature to interrupt the current: with Coad's battery, the fluid is accumulated into a reservoir (the helix), and from thence traverses a circuit, by means of a wheel breaking the current, which can be thrown off in quantity to suit the purposes of the operator. It would seem to be a law in galvanism, that intensity and quantity materially differ, which this battery of Coad's will perfectly illustrate. We have seen it in action, and can say, that in our opinion it is far more perfect than any similar apparatus we have seen. Mr. Coad has devoted much labor and expense to perfect his machine, and it would seem, by the many letters in his possession from the most eminent of the faculty, that it is fully appreciated.

New York Medical College.—The first catalogue of the officers of this College, and the announcement of the course of lectures for its first session, 1850-51, is before us. On its title page is seen the design for the new edifice, which is to be completed by the first of next month. Its appearance is chaste and imposing, and, according to the description, no doubt its interior will afford ample accommodations for the professors and students. The "general views of professional education" which are given by the Trustees, will, we think, give satisfaction to the majority of the profession. While our medical seminaries for learning increase, it is hoped that the consequent rivalry will have no other effect than the adoption of all honorable means to make each as advantageous as possible to the student. In the new College, the four months' system is to be adopted, which all the schools, with *two* exceptions, still retain. We wish the school success, and hope its graduates will always furnish evidence of the abilities of their *alma mater*.

University of New York.—The official announcement has been received of the acceptance, by Professors Gross and Bartlett, of Louisville, Ky., of the chairs, in the University of New York, which were vacated by the resignation of Drs. Mott and Detmold. These gentlemen are both well known as authors and lecturers.

Transactions of the Belmont (Ohio) Medical Society.—We have been favored with a copy of the proceedings of this Society for 1849–50. In it are the Inaugural Address of its President, Dr. Joseph Hewitson; an Essay on Scarlatina, by Dr. J. G. Affleck, the Vice President; one on Hydropathy, by J. D. Wright, M.D.; also several other able papers, on various subjects of interest to medical men, some of which we may hereafter copy into the Journal.

Medical Miscellany.—The Mayor of Pittsburg, having recently committed a number of vagrants to jail, the Sheriff refused to receive them, and the Mayor arrested him and held him to bail in the sum of \$50,000, to answer to the charge of misdemeanor. He refused the prisoners under the advice of the city physician, who said their reception would be dangerous to the health of the more permanent sick.—Dr. Julius Minding, of New York, committed suicide, Friday afternoon, by taking prussic acid, while suffering under a mental derangement.—The Homœopathic professorship in the Eclectic Medical Institute, Cincinnati, Ohio, has been abolished, which has given the greatest satisfaction to the rest of the faculty.—Dr. William Ingalls, jr., of this city, has been appointed Physician to the Marine Hospital, Chelsea.—On the 25th ult., Dr. J. C. Elliott, an estimable young physician, of Gaston Co., N. C., was killed, in a most shocking manner, by a vicious horse, which he went into the stable to bridle. On hearing his call for help, those who repaired to his assistance found him beneath the horse's feet, mangled in a most horrible manner.—A Society has been formed in London to investigate the history, origin, causes and laws of epidemic diseases, to be called the "Epidemiological Society." Dr. B. Guy Babington was elected president.—A dead infant was found in a servant girl's trunk at a hotel in Waterbury, Conn.—There is very little sickness in our city; considering the population, it never was much more healthy.—According to a calculation by Mr. Little, in the Edinburgh Monthly Journal, there are 3,000,000 opium smokers in China, and judging from the consumption of 603 smokers, each man uses about 50 grains daily. Drs. Burns and Macpherson believed that this habit did not tend to shorten life. There is however much difference of opinion on this subject.

TO CORRESPONDENTS—Besides the papers acknowledged in last week's Journal, and the conclusion of the proceedings of the Association of Superintendents of Lunatic Asylums, which have been crowded out to-day, there have been received Dr. Deane's Case of Abscess of the Tibia, and Dr. Erland's remarks on the use of Manganese.

MARRIED,—In this city, Dr. S. G. Ward, of Ridgeway, N. C., to Mrs. Lucy Stewart, of Boston; at Gilmanton, N. H., Dr. T. R. Nute, of Roxbury, Mass., to Miss Mary Ann, daughter of Mr. John Chamberlain, jr., of Albion, N. H.; Austin Lord, M.D., of North Haven, Ct., to Frances Finette Bigelow, of Marlborough. In Philadelphia, Pa., John N. Murdock, M.D., of Auburn, Mass., to Miss Amanda Maull, of P.

DIED,—In this city, Dr. E. P. Wells. At Bolton, Dr. Orrin Hunt, aged 57.

Deaths in Boston—for the week ending Saturday noon, Sept. 7, 89.—Males, 50—females, 39. Apoplexy, 1—disease of the bowels, 8—inflammation of bowels, 3—consumption, 12—convulsions, 2—cholera infantum, 3—cancer, 2—canker, 2—croup, 2—child-bed, 1—debility, 1—dysentery, 12—diarrhoea, 2—dropsy of the brain, 4—exhaustion, 1—typhus fever, 2—lung fever, 2—brain fever, 1—hemorrhage, 1—hooping cough, 2—disease of the heart, 1—intemperance, 1—infantile diseases, 3—inflammation of the lungs, 1—marasmus, 6—measles, 4—smallpox, 1—disease of the throat, 1—unknown, 2.

Under 5 years, 53—between 5 and 20 years, 5—between 20 and 40 years, 14—between 40 and 60 years, 12—over 60 years, 5. Americans, 44; foreigners and children of foreigners, 45.

Corresponding week last year, 205 deaths, including 61 by cholera.

MASSACHUSETTS MEDICAL COLLEGE.—The Medical Lectures of HARVARD UNIVERSITY will commence at the Massachusetts Medical College in Boston, on the first Wednesday in November.

Obstetrics and Medical Jurisprudence, by **WALTER CHANNING, M.D.**

Material Medica and Clinical Medicine, by **JACOB BIGELOW, M.D.**

Theory and Practice of Medicine, by **JOHN WARE, M.D.**

Pathological Anatomy, by **JOHN B. S. JACKSON, M.D.**

Anatomy and Physiology, by **OLIVER W. HOLMES, M.D.**

Principles and Operations of Surgery, by **HENRY J. BIGELOW, M.D.**

Chemistry, by **E. N. HORSFORD, M.D.**

Clinical Lectures at the Massachusetts General Hospital three times a week, by the professors of Clinical Medicine and of Surgery. Surgical operations are very numerous, performed weekly in the presence of the class in the operating theatre. The safe and effectual practice of etherization is taught in this School. Practical Anatomy is simply provided for by the most liberal arrangements. The anatomical museum is one of the largest and richest in the United States, and has a fund of \$5,000 for its increase. The Eye and Ear Infirmary and other charities are open to students.

Fees for the whole course, \$80. Matriculation, \$3. Dissecting Ticket, \$5. Graduation, \$30. Hospital and Library gratuitous.

A descriptive pamphlet may be had by application, post-paid, to David Clapp, Printer, corner of Washington and Franklin streets, Boston.

Boston, July, 1850.

July 24—eptl.

JEFFERSON MEDICAL COLLEGE. Session of 1850-51.—The regular Course of Lectures will commence on Monday, the 14th of October, and continue until the first day of March. The Annual Commencement for conferring degrees will be held early in March, instead of at the end of the month, as formerly.

ROBBEY DUNGLISON, M.D., Prof. of Institutes of Medicine, &c.

ROBERT M. HUSTON, M.D., Prof. of Materia Medica and General Therapeutics.

JOSEPH PANCOAST, M.D., Prof. of General, Descriptive, and Surgical Anatomy.

JOHN K. MITCHELL, M.D., Prof. of Practice of Medicine.

THOMAS D. MUTTER, M.D., Prof. of Institutes and Practice of Surgery.

CHARLES D. MEIGS, M.D., Prof. of Obstetrics and Diseases of Women and Children.

FRANKLIN BAGGE, M.D., Prof. of Chemistry.

ELLENBIE WALLACE, M.D., Demonstrator of Anatomy.

Every Wednesday and Saturday in the month of October, and during the Course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the class. During the past year, seventeen hundred and three cases were treated, and two hundred and nine operations performed. Amongst these were many major operations—as amputation of the thigh, leg, arm at the shoulder joint, removal of the parotid, mammae, &c., lithotomy and lithotripsy.

The Lectures are so arranged as to permit the student to attend the Medical and Surgical Practice and Lectures at the Pennsylvania Hospital.

On and after the 1st of October, the dissecting rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

Fees.—Matriculation, which is paid only once, \$5. Each Professor, \$15—\$105. Graduation, \$30. The number of Students during the last Session was 515; and of Graduates, 211. R. M. HUSTON, M.D., Dean of the Faculty, No. 1 Girard st.

Philadelphia, July, 1850.

July 10—1010

PHILBRICK & TRAFTON manufacture and have for sale to the Profession, Iodides of lead, zinc, mercury, arsenic, sulphur, iron, &c. Iron by Hydrosol; Muriated Tincture of Iron; Syrup Iod. Iron; Hyd. Per. Ox. Ferri (antidote for arsenic); Valerianate of Iron; Citrates, Tartrates, &c.

All Chemical and Pharmaceutical preparations made to order. New preparations, Chemical Tests, &c. 150 Washington st., Boston. March 6—tf

VACCINE VIRUS.—Physicians in any section of the United States, can procure ten quills charged with Pure Vaccine Virus by return of mail, on addressing the Editor of the Boston Medical and Surgical Journal, enclosing one dollar, not paid, without which no letter will be taken from the office. Feb. 5.

ALBANY MEDICAL COLLEGE.—The next annual Course of Lectures will commence on the first Tuesday of October, and will continue sixteen weeks.

ALDEN MARCH, M.D., Professor of Surgery. **T. ROMEYN BECK, M.D.,** Prof. of Materia Medica. **JAMES MCNAUGHTON, M.D.,** Prof. of Theory and Practice of Medicine.

LEWIS C. BECK, M.D., Prof. of Chemistry.

EBENEZER EMMONS, M.D., Prof. of Obstetrics and Natural History.

JAMES H. ARMBRY, M.D., Prof. of Anatomy.

THOMAS HUN, M.D., Prof. of Institutes of Medicine.

AMOS DEAN, Esq., Prof. of Medical Jurisprudence.

The fees for a full Course of Lectures are \$70. The Matriculation fee is \$5. Graduation fee, \$30.

Those who wish for further information, or for circulars, will address a letter (post paid) to the Registrar, **THOMAS HUN, Registrar.**

July 3—tl

BOYLSTON MEDICAL SCHOOL. INCORPORATED MARCH, 1847.—The regular course of instruction in this Institution for the ensuing term, will begin on the 1st of September.

Instruction is given daily in the various departments of medicine, by means of recitations and lectures, aided by the use of plates and anatomical preparations and the examination of patients. The students of this School may attend daily the medical visit at the House of Industry, whose hospitals contain a large number of patients, presenting every variety of disease, of children as well as of adults, including excellent opportunities for the practice of auscultation and percussion, and the study of contagious diseases. The opportunities for clinical study which this Hospital affords, are fully equal to any in the city.

All the privileges enjoyed by any medical students at the Massachusetts General Hospital and the Eye and Ear Infirmary, are free also to the pupils of this School.

DISSECTION.

This School enjoys the advantage of a private dissecting room, where special attention is paid to the study of practical anatomy. Subjects will be provided, on which students may operate, under the direction of the instructors in surgery and anatomy.

EYE AND EAR.

A special course of lectures on the Eye, illustrated by cases, will be given, in the course of the winter, by Dr. H. W. Williams. Another special course on the Ear, similarly illustrated, will be given by Dr. E. H. Clarke.

Ample opportunities will be furnished for practical obstetrics.

The students will have admission to several excellent private libraries for reference. The daily recitations and lectures are of the most thorough and practical character.

The room of the School, in the Liberty Tree Block, corner of Essex and Washington Streets, is constantly open for the use of students. It is furnished with the large anatomical plates of Bouvier and Jacob, with a cabinet of preparations and articles of the materia medica.

GEORGE H. GAY, M.D., Instructor in Anatomy and Physiology.

WM. HENRY THAYER, M.D., Instructor in Pathology and Legal Medicine.

JOHN BACON, Jr., M.D., Instructor in Chemistry and Toxicology.

EDWARD H. CLARKE, M.D., Instructor in Materia Medica and Therapeutics.

CHAR. E. BUCKINGHAM, M.D., Instructor in Obstetrics and Diseases of Women and Children.

HENRY G. CLARK, M.D., Instructor in Operative and Clinical Surgery.

HENRY W. WILLIAMS, M.D., Instructor in the Principles and Practice of Medicine.

For terms, apply to **E. H. Clarke, M.D.,** 2 Harrison Avenue. **WINSLOW LEWIS, M.D.,** Pres't. Boston, August, 1850. Aug. 14—ep3m.

DENTAL AND SURGICAL INSTRUMENTS.—**D. WALTHER & Co.,** successors to N. Hunt, manufacture and have for sale all kinds of Surgical and Dental Instruments and Implements.

Old instruments ground, polished and repaired, at the shortest notice.

Orders will be attended to with promptness.

May 22—tf 128 Washington street, up stairs.

HYDRARGYRUM CUM MAGNESIA.—This new article of medicine just received and for sale by

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Sept. 26—tf 160 Washington st.